

CLAIMS

WHAT IS CLAIMED IS:

- 1 1. A method of programming a fuse, the fuse including a
2 material having a first phase and a second phase, the first phase having a
3 different resistivity than the second phase, the method comprising:
4 providing a current to the fuse; and
5 changing the material from the first phase to the second
6 phase with the current.
- 1 2. The method of claim 1, wherein the second phase is a
2 relatively higher resistance than the first phase.
- 1 3. The method of claim 2, wherein the current is a programming
2 current.
- 1 4. The method of claim 3, wherein the material has a first sheet
2 resistance in the second phase of at least two times of a second sheet
3 resistance in the second phase.
- 1 5. The method of claim 4, the first sheet resistance is at least 8
2 times the second sheet resistance.
- 1 6. The method claim 4 wherein the first sheet resistance is
2 approximately 10 times the second sheet resistance.
- 1 7. The method of claim 1, wherein the material includes nickel.
- 1 8. The method of claim 7, wherein the material is a silicide.
- 1 9. The method of claim 7, wherein first phase includes
2 mononickel silicide and the second phase includes nickel disilicide.

1 10. The method of claim 9, wherein the first phase has a sheet
2 resistance between 1-5 ohms per square.

1 11. The method of claim 10, wherein the second phase has a
2 sheet resistance between 10 and 40 ohms per square.

1 12. A fuse for an integrated circuit, the fuse comprising a
2 material capable of existing in a first phase or a second phase in response
3 to at least one of a current signal and a voltage signal, the fuse having a
4 different resistance in the first phase than in the second phase.

1 13. The fuse of claim 12, wherein the fuse further comprises a
2 layer of material including silicon and a silicide layer.

1 14. The fuse of claim 12, wherein the silicide includes nickle.

1 15. The fuse of claim 12, wherein first phase includes
2 mononickel silicide and the second phase includes nickel disilicide.

1 16. An integrated circuit comprising:
2 a polysilicon layer disposed above an insulative structure; and
3 a silicide layer disposed above the polysilicon layer, the
4 silicide layer being a first type and being convertible to a silicide layer of a
5 second type in response to a signal, wherein a resistance of the silicide
6 layer changes when the silicide layer is converted from the first type to
7 the second type.

1 17. The integrated circuit of claim 15, wherein the silicide layer
2 of the first type is mononickel silicide.

1 18. The integrated circuit of claim 16, wherein the silicide layer
2 of the second type is nickel disilicide.

1 19. The integrated circuit of claim 17, wherein the insulative
2 structure is a field oxide or an insulative layer.

1 20. A process of manufacturing a fuse for an integrated circuit,
2 the process comprising:
3 providing a silicide layer above a layer including silicon, the
4 layer including silicon being above a bulk silicon substrate or a field oxide
5 structure; and
6 patterning the silicide layer in accordance with a fuse pattern,
7 wherein the silicide layer is in a first phase, the first phase being
8 convertible to a second phase, the first phase having a different resistance
9 characteristic than the second phase.

1 21. The process of claim 19 further comprising:
2 providing conductive vias at a first end and a second end of
3 the fuse pattern.